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Patient Education and Quality of Life in Type 2 Diabetes: Insights from a Narrative Review

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Abstract

Type 2 diabetes mellitus (T2DM) significantly impairs the physical, psychological and social dimensions of life in affected individuals (1). Proper disease control requires effective self-management to reduce the risk of complications and optimize long-term functioning (2). These activities should extend beyond glycemic regulation to include rehabilitation and complication prevention. Patient education is therefore considered a crucial factor enabling individuals to engage in effective self-management (3).

Objective: This review aims to summarize evidence on how patient education influences quality of life (QoL) in people with T2DM (4).

Methods: A narrative review was conducted by searching PubMed, Scopus, and Google Scholar for literature from 2010 to 2025 (5).

Results: Existing research consistently indicates that structured educational interventions — including Diabetes Self-Management Education (DSME), lifestyle coaching and digital tools — contribute to improved glycemic control, greater disease awareness and enhanced mental health outcomes (6, 7). Educational programs support emotional well-being, increase self-efficacy and strengthen social participation among people with T2DM (8, 9).

Conclusions: Patient education is essential for improving QoL and clinical outcomes in Type 2

diabetes (T2DM) patients (10). Personalized and culturally adapted education should be integrated into standard care (11).

Key words included “type 2 diabetes,” “patient education,” “quality of life,” and “self-management” (5).

1. Introduction

Type 2 diabetes is a chronic disease that affects many aspects of life (12).
As of 2021, approximately 537 million adults worldwide were living with T2DM (International Diabetes Federation. IDF Diabetes Atlas, 10th edition. 2021.). Quality of life (QoL) of patients with type 2 diabetes is often reduced because they experience complications such as poorly healing foot wounds, retinopathy, kidney failure or limb amputations (13).
In addition to physical symptoms, it adversely affects psychological well-being and social life (14). Approximately 40 percent of the diabetic population has difficulty staying mentally healthy. The disease overwhelms them mentally. In addition, it also has an impact on their work (12).
Type 2 diabetes is a disease that places a multifaceted burden on the body, hence the growing recognition of the need for comprehensive diabetes self-management education (DSME). Equipping individuals with the knowledge, skills, and motivation plays a key role in educating patients to effectively manage this disease. Studies have shown that structured educational programs can significantly improve glycemic control, strengthen self-care behaviors, and ultimately lead to a better quality of life for these individuals (3, 9). Patient-tailored educational interventions are associated with improved mental well-being, greater satisfaction with treatment, and reduced diabetes-related stress (6, 13). To be effective, diabetes education must include not only dietary and pharmacological aspects of treatment, but also physical activity, stress management and problem-solving skills. It allows patients to actively participate in their care, which can result in a greater sense of autonomy and better long-term outcomes (10).

Despite the known benefits, access to high-quality educational interventions remains inconsistent across different populations, particularly in low-resource settings or among individuals with limited health literacy (15). The multidimensionality of the quality of life concept includes physical, emotional, social, and functional well-being. Clinical indicators such as HbA1c should be considered when assessing the effectiveness of educational interventions, but not only. Patient-reported outcomes that indicate daily functioning and satisfaction with care should also be considered (16).

Understanding the ways in which education programs influence these outcomes is crucial for healthcare providers, educators, and policymakers who aim to implement patient-centered diabetes care.

This review aims to synthesize current evidence on the impact of patient education on quality of life in individuals with type

2 diabetes, highlighting key strategies, challenges, and future directions in this field.

Methodology

A non-systematic literature search was performed using PubMed, Scopus, and Google Scholar. The review included studies from 2000–2025 focusing on adults with T2DM and published in English. Both qualitative and quantitative research were included for a broad perspective.

3. Types of Patient Education Interventions

3.1 DSME Programs

The goal of DSME interventions is to build knowledge, skills, self-control, and behavior change, which are delivered by trained educators (10). Meta-analyses confirm significant HbA1c reduction, improved compliance, and satisfaction among patients attending DSME (3).

Beyond glycemic control, DSME has been shown to reduce diabetes-related emotional distress and enhance patients' confidence in managing their condition (17).

The lifestyle changes promoted by these programmes through increased physical activity, healthy eating habits and regular medication intake have a combined effect on improving overall health conditions and quality of life (18).

The effectiveness of DSME is further enhanced when education is tailored to individual cultural, social, and literacy needs, highlighting the importance of patient-centered approaches (19).The effectiveness of DSME is well established, but access to such programs is uneven among rural and underserved populations, underscoring the need for broader implementation and policy support (20).

3.2 Lifestyle Counseling

Programs focused on diet and physical activity demonstrate improvement in metabolic rates and weight control (21). Lifestyle counseling interventions that incorporate personalized dietary planning, exercise routines, and behavioral coaching have been shown to positively impact both physical health and psychosocial outcomes in individuals with type 2 diabetes (22). Moreover, integrating psychological support into counseling—such as coping skills training or problem-solving therapy—has been associated with improved mood, reduced depressive symptoms, and greater engagement in self-care behaviors (23). Thus, the multidimensional benefits contribute to improved quality of life by improving patients' sense of control and daily functioning. Lasting change is therefore more likely when there is continuity in lifestyle counseling. It is goal-oriented and adapted to the cultural and socio-economic context of the individual (24).

3.3 Digital Tools

Due to their accessibility and flexibility, digital platforms, which include mobile applications and telemedicine, have gained popularity after the pandemic (25). Evidence shows that these tools support better glycemic control, enhance self-care behaviors, and improve quality of life (26). Telehealth provides remote access to education and care, especially from hard-to-reach areas, while mobile applications help monitor glucose levels and follow medical recommendations (27).

Studies report that digital DSME programs are comparable to in-person education in improving HbA1c and patient satisfaction, while also reducing diabetes-related distress (28). However, disparities in digital literacy and access remain key challenges, particularly among older or socioeconomically disadvantaged patients (24).

4. Impact on Quality of Life

Living with type 2 diabetes can significantly affect a person's physical health, emotional balance, and ability to engage socially (9, 29). Patient education plays an important role in improving quality of life by helping individuals better understand their condition, feel more in control, and reduce the anxiety that often comes with managing a chronic illness (29). It also encourages healthier habits and strengthens communication between patients and healthcare providers, both of which contribute to a greater sense of well-being (6).

5. Barriers to Education

Despite the well-established benefits of diabetes education, many patients still face significant barriers that prevent them from fully engaging with it. One of the most common challenges is low health literacy—patients may have trouble understanding medical instructions, nutrition labels, or even the importance of regular monitoring. Language differences can also create confusion, especially when educational materials aren't available in the patient's native language or aren't adapted to their cultural context. In addition, people living in rural areas or low-resource settings often have limited access to diabetes specialists or structured education programs. Another growing issue is digital exclusion—many patients, particularly older adults, don't have the digital skills or internet access needed to take part in online education or telehealth services (30).

To address these challenges, educational approaches must be tailored to the specific needs of the audience. Simply translating materials isn't enough; they need to reflect the patient's cultural background, values, and daily realities. Using relatable examples, plain language, and involving educators who share the same cultural or linguistic background can make a real difference. When patients feel that the education speaks their language—both literally and culturally—they're more likely to engage, trust the information, and apply it in their everyday lives (31).

6. Conclusion

Patient education is fundamental in managing type 2 diabetes and plays a crucial role in improving patients' quality of life. Programs such as Diabetes Self-Management Education

(DSME), lifestyle counseling, and digital tools not only help improve glycemic control but also enhance emotional well-being, boost self-efficacy, and encourage active patient involvement in their care (10). However, for education to be truly effective, it must be tailored to individual needs, culturally sensitive, and easily accessible—especially (32). Moving forward, addressing these inequalities will be essential to ensure all patients with diabetes receive the educational support they need to manage their condition successfully (33).

Disclosure

Author's contribution

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-Methodology: Małgorzata Stróżna, Katarzyna Chmura

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